EPA Region 5 Records Ctr.
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United States Environmental Protection Agency
Region 5
POLLUTION REPORT

Date: Friday, September 17, 2004
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Subject: Initial
St. Louis Smelting and Refining - a.k.a. Collinwood Subdivision
Pine Lake Road, Collinsville, IL, IL

POLREP No.:	1	**Site #:**	1065
Reporting Period:		**D.O. #:**	
Start Date:	9/20/2004	**Response Authority:**	CERCLA
Mob Date:	9/13/2004	**Response Type:**	NTC
Completion Date:		**NPL Status:**	Non NPL
CERCLIS ID #:	ILD980607006	**Incident Category:**	
RCRIS ID #:		**Contract #**	

Site Description
1. Location

The St. Louis Smelting and Refining Site is located within the city boundaries of Collinsville, Madison County, Illinois. The site covers approximately 170 residential properties. However, up to 301 residential properties could potentially be affected.

The site is located east of Route 159 with Pine Lake Road as one of its central features. The site extends to the west to include Pine Lake and to the east to include the unnamed pond at the end of Pine Lake Road. Roads most nearly bordering the site on the north and south are Peachtree Trail and California Avenue, respectively. Property use within site boundaries is single family residential. Residential property lot size are less than on acre with a few exceptions. Homes in the area range from approximately 90 years old to less than 1 year in age. Homes in the area receive potable water through a public water supply system. Topography within the central portion of the site is relatively flat changing to rolling hills on the northern, southern, and eastern portions of the site.

Two surface water bodies exist on site, Pine Lake and the unnamed pond on the eastern end of Pine Lake Road. Surface water runoff from residential properties adjacent to Pine Lake is channeled into the lake. The south shore of Pine Lake is dammed and bounded by Pine Lake Road. The dam has a culvert that allows water in Pine Lake to drain under the road during high-water periods. After flowing under Pine Lake Road, drainage from Pine Lake flows south-southwest into the lakes in Woodland Park. Residents of the Pine Lake Subdivision surrounding Pine Lake own the water body and small portions of adjacent property. Pine Lake and unnamed pond are used for recreational fishing throughout the year and swimming during warmer months.

2. Description of threat

It has been determined that impacted soil from nearby lead smelting activities contributed to elevated lead in the soil for the residents living near the site. Contaminants of concern are primarily lead and other heavy metals. The elevated levels of lead in nearby surface soil are at concentrations considered hazardous to human health. The site□s proximity to residential properties requires immediate control and impacted soil removal activities.

Illinois EPA has documented the presence of lead in residential yards above health standards. The health concerns at this Site are related to the fact that residents live in and amongst the former lead slag piles, potentially exposing young children, pregnant women and elderly individuals to contamination.

The effects of lead exposure are more severe for young children and the developing fetus through exposure to a pregnant woman. The harmful effects of lead include premature births, lower birth weight, decreased mental ability in the infant, learning difficulties, and reduced growth in young children. In adults, lead increases blood pressure, induces anemia as a result of the inhibition of hemoglobin synthesis, decreases reaction time, affects memory, and damages the male reproductive system. Lead is also considered by U.S. EPA to be a class B2 or probable human carcinogen.

The highest concentration of lead was over 90,000 ppm at one residential location. In addition, the Illinois Department of Public Health recommends that remediation efforts be initiated on the basis of the high levels of lead found in the surface soils and based upon the likelihood of sensitive populations (i.e. children and pregnant woman) being exposed to lead. Since the neurological effects on young children and the developing are considered to be irreversible, even short term exposures to elevated lead levels are of a public health concern.

3. Site background

Historic maps and records indicate the smelting facility□s main operations were situated on approximately 24 acres to the east of Pine Lake just north of Pine Lake Road. Although lead smelting activities ceased sometime around 1933, residential development on and

around the former smelter progressed over many years and in separate phases since the 1950's. Those same residential developments exist to this day.

The St. Louis Smelting and Refining Company operated a lead smelting facility from 1904 until November 1933. At peak production, the facility employed 425 men. At the time of operation, the facility was located northeast of Collinsville, Illinois. Since that time, Collinsville has expanded to the area surrounding the facility and as indicated by historical aerial photographs, in the 1950's and 1960's residential homes began to be built on the property. The plant closed in November 1933, following a strike for higher wages and shorter hours (Stehman). Following plant closure, equipment from the facility was shipped to South America (Stehman). The actual date when the facility was dismantled is unknown, however, aerial photographs from 1941 indicate that only two buildings remained intact. The aerial photographs show primarily foundations, rubble, a general lack of vegetation and a large slag pile where the unnamed pond at the end of Pine Lake Road is now located.

A plat map of Madison County from 1917 indicated that at one time, St. Louis Smelting owned up to 482 acres, however, it is generally believed that refining activities occurred on approximately 40 acres. Through various data collection activities, it is now believed that the area affected with elevated levels of lead may total approximately 148 acres. Residential development in the area directly north and south of Pine Lake began in the 1950's as evidenced by historical aerial photographs. Residential development to the east of Pine Lake in what is now called Collinswood Subdivision began in the mid-to-late 1970's. Residential development in the area has progressed in phases and building currently continues on the last empty lots.

4. State and local actions to date

The Illinois Environmental Protection Agency (IEPA) conducted a preliminary assessment (PA) in May, 1985, to prepare a Hazard Ranking System package for potential listing on the National Priorities List. On October 17, 1985 the Illinois Department of Public Health (IDPH) collected additional soil samples from 26 residential properties and conducted a voluntary blood screening for neighborhood children. While results of the blood lead screening tested below levels of concern, IDPH detected lead concentrations in soil between 31 mg/kg to 7944 mg/kg. Additional soil sampling activities from a multitude of residential properties occurred on September 9, 1986, with slag piles that tested between 13,200 mg/kg to 14,800 mg/kg.

On December 1, 1989, IEPA completed a site investigation (SI) that was ultimately archived on the CERCLIS list as per the recommendation of the SI Report. TCLP sample results from the IEPA sampling effort in the Spring of 1991 yielded results from 0.003 mg/L to 20 mg/L.

In November of 2001, the Pile Lake Homeowners Association were considering dredging the three northern fingers on Pine Lake and collected samples from each finger. Those results indicated that local disposition of the silt materials would be regulated as a hazardous waste as all three sample results were above the 5.0 mg/L regulatory standard.

On March 6 - 8, 2002, IEPA conducted an x-ray fluorescence (XRF) field-based soil and lake sediment screening effort from surface soils located at 6, 12, 24, and 30 inches below ground surface and at various depths from lake sediments. Sample concentrations ranged from below 400 mg/kg to as high as 4988 mg/kg.

On July 29, 2002, IEPA conducted an expanded site investigation (ESI) for additional soil and sediment sampling. Lead concentrations in soil ranged from 52.8 mg/kg to 35,900 mg/kg.. Information obtained during the ESI identified contaminated residential soil that is considered a □source□ area of contamination at the St. Louis Smelting and Refining Site.

Current Activities

Response activities to date

- After a series of meetings with the respondent representatives and Advanced GeoServices Corp. (AGC), U. S. EPA requested that a Work Plan be submitted for project related removal activities. U.S. EPA received the Work Plan on May 18, 2004.

- On July 14, 2004, AGC commenced collection of both grab and composite samples to be used for verification sampling purposes.

- AGC has contracted with ENTACT Environmental Services to execute the removal of lead impacts to residential properties at the site.

- ENTACT has establish a soil staging area just north of the site along Adams Street. AGC and ENTACT have located field office facilities adjacent to the soil staging area.

- A pre-construction meeting was held on September 14, 2004, to discuss project start-up activities and communication with all the affected stakeholders.

Planned Removal Actions

- Impacted soil removal activities are expected to commence the week of September 20, 2004.

Key Issues

- Homeowners have expressed concerns over the choice of grass seed and straw verses sod for re-vegetation purposes.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				

RST/START	$16,250.00	$8,511.94	$7,738.06	47.62%
Intramural Costs				
USEPA - Direct (Region, HQ)	$0.00	$19,221.00	($19,221.00)	0.00%
Total Site Costs	$16,250.00	$27,732.94	($11,482.94)	-70.66%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

www.epaosc.net/StLouisSmeltingandRefining